

ABSTRACT

An endodontic system of shaping instruments, irrigation cannulas, filling instruments and materials designed to safely create specific tapers of root canal preparations and to clean, dry, seal, and restore them. The shaping instruments are a series of reamers, files, and handpiece burs, made of stainless steel, nickel-titanium, or other alloys, which impart several different specifically-tapered apertures in root canals. The instruments have one or more safety features to eliminate perforating curved roots, including shorter flute length as the angle of taper increases and variable sharpness along the length of the flute portion, as well as variable flute pitch along the length of the flute portion to maximize cutting efficiency and resistance to breakage, and a rounded tip to eliminate ledging. The hand instruments have a handle designed to optimize use of the instruments in apically directed, rotary cutting motions. The irrigation cannulas, the condensation heat carriers, pluggers, injection needles, and backfillers, and the materials, including drying paper points, filling materials, and restorative post systems, have shapes which match the canal tapers created by the shaping instruments.